Cover Disk Notes

August 1992

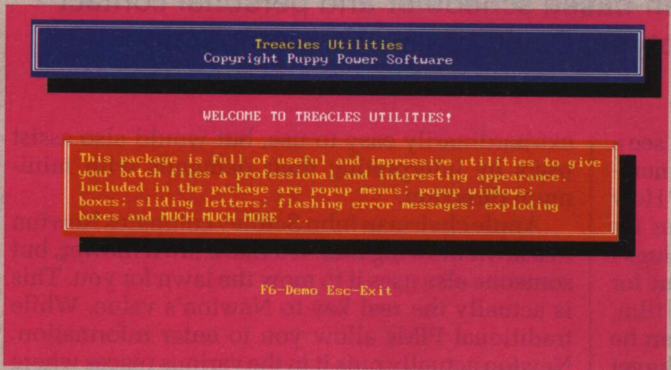
Although our first cover disk proved incredibly popular, one or two of you would have liked to have seen more DOS software. This month, then, we've split the main part of the disk in two, to give you the best of both worlds. (We've also compressed the files, to give you more of both worlds.)

DOS

Treacle Utilities

If you've played around with batch files you'll have realised that they are, potentially, an extremely powerful tool. The idea behind the Treacle Utilities is to enhance the appearance and functionality of your batch files.

A collection of over 30 utilities, Treacle gives you pop-up windows and menus, impressive text and colour control and much more, all from a set of consistent command line utilities.

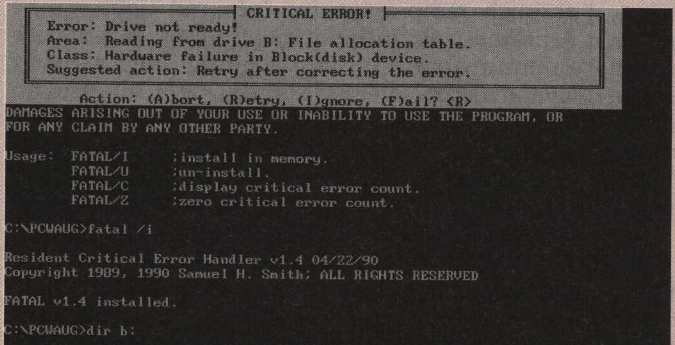


```
Treacles Utilities
Copyright Puppy Power Software

WELCOME TO TREACLES UTILITIES!

This package is full of useful and impressive utilities to give
your batch files a professional and interesting appearance.
Included in the package are popup menus; popup windows;
boxes; sliding letters; flashing error messages; exploding
boxes and MUCH MUCH MORE ...

F6-Demo Esc-Exit
```

Comprehensive documentation is provided on the disk, but like all such tools, the best way to find out how things work is to use them.

Fatal

Not as unpleasant as it sounds — just the opposite, in fact — Fatal intercepts those horrible, obscure and unhelpful DOS error messages and replaces them with lucid explanations. Microsoft should have done it, but since they haven't...



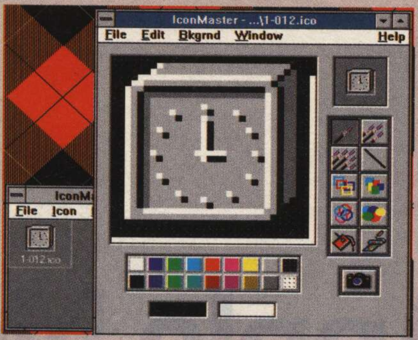
```
                              ┤ CRITICAL ERROR! ├
   Error: Drive not ready!
   Area:  Reading from drive B: File allocation table.
   Class: Hardware failure in Block(disk) device.
   Suggested action: Retry after correcting the error.

         Action: (A)bort, (R)etry, (I)gnore, (F)ail? <R>
DAMAGES ARISING OUT OF YOUR USE OR INABILITY TO USE THE PROGRAM, OR
FOR ANY CLAIM BY ANY OTHER PARTY.

Usage:  FATAL/I      ;install in memory.
        FATAL/U      ;un-install.
        FATAL/C      ;display critical error count.
        FATAL/Z      ;zero critical error count.

C:\PCWAUG>fatal /i

Resident Critical Error Handler v1.4 04/22/90
Copyright 1989, 1990 Samuel H. Smith; ALL RIGHTS RESERVED

FATAL v1.4 installed.

C:\PCWAUG>dir b:
```

Windows

Icon Master

Windows icons can be addictive. Whether you're trying to find an appropriate symbol for a DOS application or for your own applications, or if you're simply unhappy with the icons supplied by default with your Windows applications, we have a treat for you.

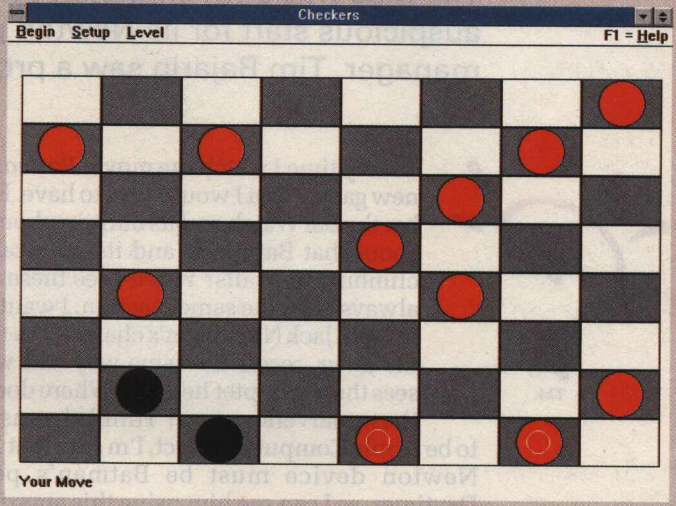
IconMaster is a sophisticated icon editing and creation tool which will enable you to fiddle with your icons to your heart's content.

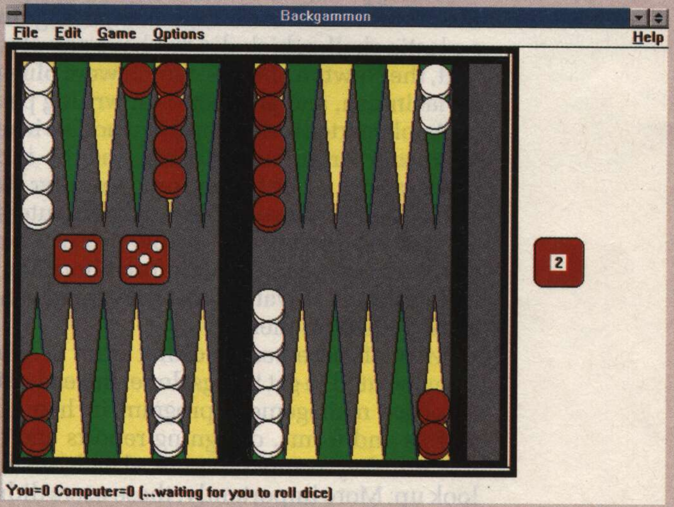


As if that wasn't enough, we've also included two huge libraries of ready-made icons. One library has conventional, two dimensional icons, the other X-desktop like 3D symbols.

Games

Two classic games this month. Both have extremely simple rules and both are deceptively hard to master. **Draughts** and **Backgammon** may not be the most glamorous games in the world, but they can be every bit as addictive as some shoot-'em-ups.





Installation

To install your free software simply type "a:install" from your hard disk and follow the instructions.

If you have any problems with installation, call Hawkastle on (0344) 300417. If you have any other problems, call the *PCW* Tech Dept on 071-927 9278. As ever, if you require a 5.25in disk, simply return the 3.5in disk and we'll do the rest.

AUG 1992

BENCHTEST PCW PREVIEW

Apple Newton

The Mac was a revolution in computing, and Apple predicts the same auspicious start for its Newton pen-based scheduler and personal contact manager. Tim Bajarin saw a prototype; David Brake sees competition.

TM.

Every time I watch the movie *Batman* I see a new gadget that I would love to have. Remember the Bat Watch and its built-in phone? How about that Bat Spear and its wire cables for climbing up walls? When I see these things I always have the same reaction. I want one for myself. Jack Nicholson's character in the film, the Joker, reacts the same way and when he sees the Bat Copter he asks: 'Where does he get those marvellous toys?' I think the answer has to be Apple Computer. In fact, I'm sure that Apple's Newton device must be Batman's personal Daytimer, as I can see him using this amazing pen-based computer to handle his schedule and personal contacts.

I got a chance to look at what Newton will be when Apple showed it in May at the Consumer Electronics Show in Chicago. The package included a plastic shell, which did not have any electronics in it, the Newton circuits, which were plugged into a Macintosh, and an electronic writing pad.

Apple started to develop this machine in response to several strong trends. One was the increasing digitisation of information. Another was the unfulfilled promise of personal computers which are still too hard to use. Apple's researchers were sent out to ask people what information they wanted to handle and to watch what they were using while testing ideas on them.

Most of these people didn't want to 'compute'. They wanted to get things done. Instead of taking a database management program in hand, writing scripts and forms, designing reports and creating macros, they wanted to note, sketch, scribble and look up. More importantly, these users didn't want to make notes or sketch just at a desk and they did not want to read manuals.

The users interviewed just wanted to grab, keep, grasp, organise and share information, using skills they already had. Apple's researchers had studied the increasing popularity of portable or handheld electronic devices like notebook PCs and digital diaries and they were excited about the use of a pen for input; they came up with a device that would be personal, portable and digital. It would not only be extraordinarily easy to use, but would also assist users by interpreting their demands with minimum direction.

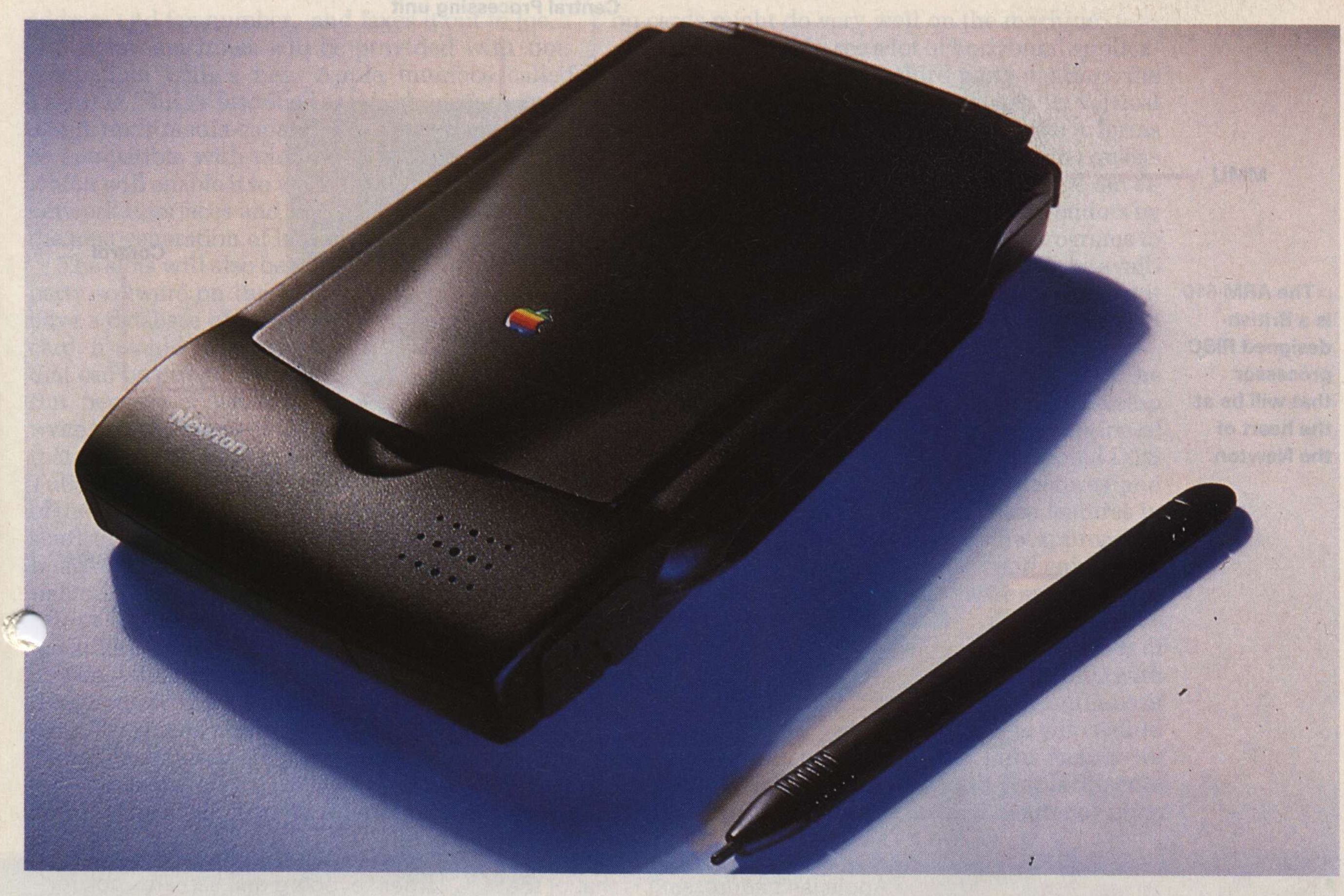
Apple chairman John Sculley compares Newton to a lawn mowing tool. It's like a lawn mower, but someone else uses it to mow the lawn for you. This is actually the real key to Newton's value. While traditional PIMs allow you to enter information, Newton actually puts it in the various places where it becomes relevant to the user. It doesn't just save what you do, it guesses what you want.

The unit itself weighs under one pound and measures 15.24 x 20.32 x 1.91cm. It uses the Advanced RISC Machine 610 for its processor and includes a single intelligent card slot that conforms to the PCMCIA industry standard. These cards could carry more memory, programs or peripheral devices such as a fax, modem, pager or cellular phone connections. Some models are expected to have wireless communications capabilities, either through radio waves or infra-red light waves. Motorola, an influential supplier of wireless communications equipment, has already announced its interest in producing an interface for Newton to its own services.

It has a flip-top cover to protect the writing surface and display screen. The operating system is called DYLAN, which stands for Dynamic Language and is a proprietary OS for Apple's PDAs. The OS software itself is stored in ROM, with built-in features for handwriting recognition and communication. Newton's software quickly recognises hand-printed text and converts it into type. The display is a combination writing surface and display screen.

The Newton won't have a keyboard or mouse. Instead, you use a stylus to enter information and tell the machine what to do. The stylus works like a pen but does not have ink, just a point that the Newton recognises when it touches the display screen surface.

Applications included in the initial model include software for taking notes, sketching figures, checking schedules and storing addresses. Newton will also come with a program that will allow it to



∆ **This is the prototype Apple has been showing off, though the Newton technology seems likely to be used in several different devices**

share information with an existing desktop Mac or PC. While the hardware is important, the Newton's most important component is the software it employs. The OS does not use the conventional Mac menuing system. Instead it has an intuitive, pencentric way of guiding the user through the software. In fact, it actually seems more like using pen and paper than using a computer.

The most significant feature of the new software is the handwriting recognition program. You can print on Newton's screen, and your letters will be translated into computerised text that can be stored, spell-checked and formatted. It is so intelligent that it guesses where you want margins, how large you want the characters, where paragraphs end and so on.

This is the intelligent assistant behind the Newton. The graphics features are also very nifty. Newton will let you sketch and you can store your sketches in their original, rough form. But it can also automatically straighten your attempts at lines, round your awkward circles and even space your lines accordingly. If you want to erase a mistake, you just scribble over the offending line, word or drawn object with the stylus. Newton can directly relate what you write or draw to what it already knows.

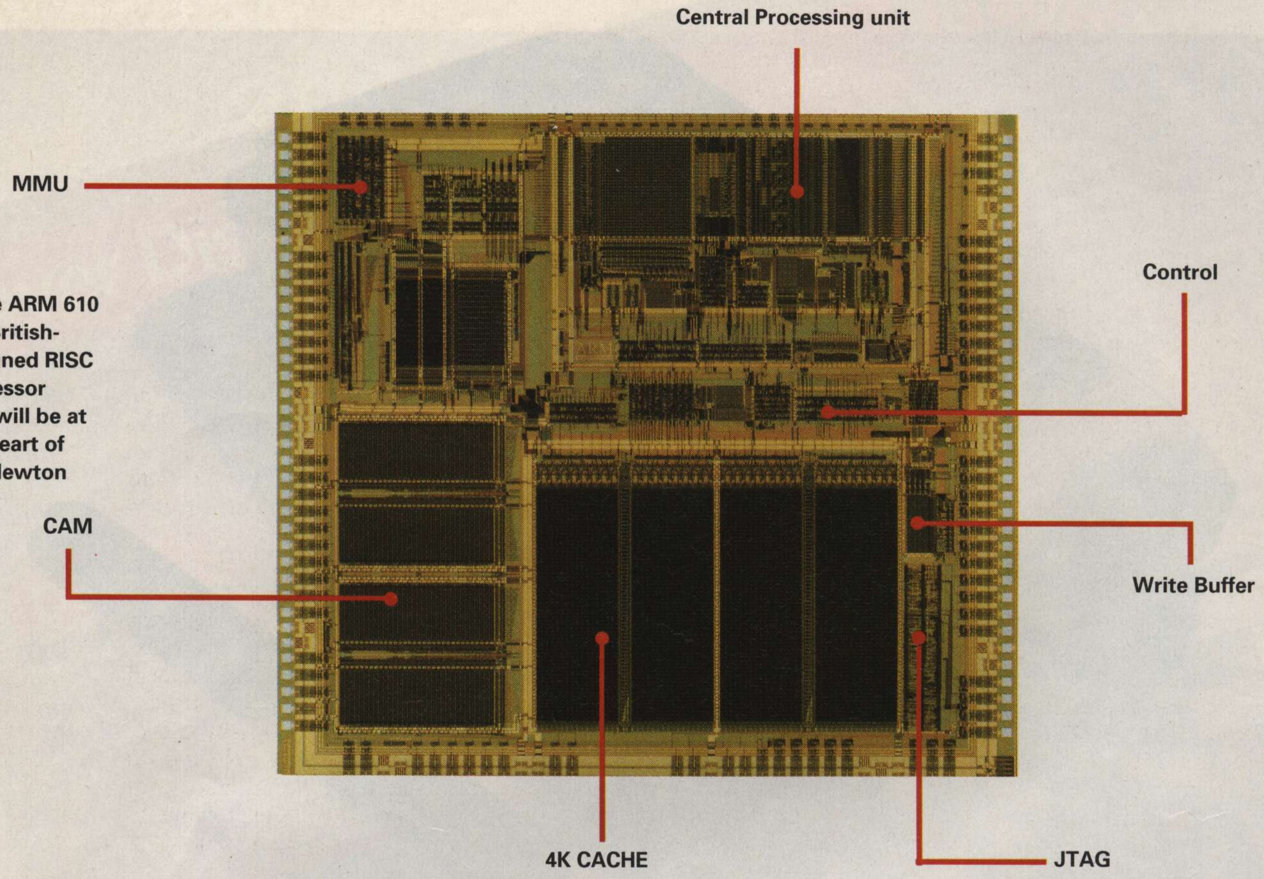
Audio and visual feedback is also key to the design. When you want to scroll up the page you touch a scrolling icon and it scrolls up or down and sounds like you are flipping an actual piece of paper. If you sort through the Rolodex like a database or address book it sounds just like you are flipping through a paper Rolodex. To throw a file away you just draw an X over it and the file folds up into an image that looks like a scrunched-up piece of paper. It throws itself into the trash bin at the bottom of the screen, ending with a plop sound in the basket.

If you write 'call Bob at noon' Newton will immediately save a reminder in its calender to make a phone call to Bob at noon. It will even look up Bob's number in its address book and offer you an icon that you can press with the stylus to automatically dial his number.

It is just as smart in response to the command 'Write Joe'. If it started out as a note, it will go to the address book and find Joe's address and format it in a business letter style. Soon, a simple note looks like a professional letter, ready to be printed or sent email. If you ask Newton to fax that message, it automatically goes out to the address book and looks up Joe's fax number, adds a pre-formatted cover page to the note, inserting Joe's full name,

Tentative Specifications

- 20MHz 32-bit ARM 610 processor (delivers 15 MIPS of processing power).
- 512K RAM.
- One or more TrimBus slots capable of holding program cards, fax-modems, Flash memory cards or PCMCIA-compatible hard disks.
- Serial port for connecting to conventional printers, AppleTalk networks and modems.
- Infra-red transceiver for wireless communication at short distances to a base unit.
- Applications' in ROM — address book, to-do list, calendar and formatter to prepare text for output.
- Powered by four AAA batteries for several hours.



▷The ARM 610 is a British-designed RISC processor that will be at the heart of the Newton

Newton's Competition

In announcing the Newton at least eight months before it is planning to ship it, Apple has been using the oldest weapon in a computer manufacturer's arsenal — Fear, Uncertainty and Doubt (FUD).

The idea is to promise something so revolutionary that sales of everyone else's products will be killed off while consumers wait for your own. If Newton performs as promised and is delivered on time at the price suggested (well under $1000 initially) it looks as if it might well wipe out a lot of the opposition. But there are a lot of 'ifs' there.

What is easy to forget amid all the hype is that the Newton launch was of a set of technologies, not of a product itself. It is likely that there will be several Newton devices, each dedicated to different functions, rather than a single, multi-purpose machine (see pictures).

Meanwhile, there are plenty of other people working on handheld computers of one kind or another, many of them offering different sorts of features. Nobody really seems to have a clear idea of who will buy these machines or why, but the technology to make them smaller now exists, so various manufacturers are throwing different machines at differing markets and hoping that some of them stick.

The most obvious market area that Apple isn't addressing is that of the handheld DOS or Windows-based machine. DOS, which was designed around a full-sized screen or worse, and Windows, which assumes high-resolution graphics, a pointing device and lots of storage as well, aren't ideally suitable for a handheld device. A machine that runs them does have the advantage of supporting thousands of existing applications, however. Building one is much easier than trying to devise a non-DOS machine because so many of the choices have already been made and the technology is established.

Chips & Technologies has devised 'PC on a Chip', which offers would-be handheld manufacturers the equivalent of an 8086 at 14.3MHz, plus a keyboard controller, a CGA graphics adapter and the rest with low power consumption and a small size. Phoenix Technologies leads a group working to create a 'Companion PC' standard. Lotus will provide software based on LotusWorks, Microsoft brings ROMable DOS 5.0, Duracell will provide battery technology, Intel will help implement PCMCIA, and DIP (who designed the PC3000 and the Atari Portfolio) will help tie everything together. The machines will be made by a 'major Japanese manufacturer' for OEM customisation but won't be quite pocketable, since the group's research has found that users want a larger keyboard and screen. Look for the first products to emerge towards the end of the year and be demonstrated at Comdex Fall. The intention is to make machines averaging less than $750, and some, more basic versions could cost less than $500.

Hewlett Packard has also decided to enter the DOS-compatible pocket computer market aggressively. The 95LX already exists, of course — a DOS-compatible palmtop which runs Lotus 1-2-3 — but HP isn't going to stop there.

Talking to Mark Ellis, who is responsible for sales and marketing of the 95LX in the UK, he suggested HP would be working over the next few months on improving screen technology to the point where you could view a full screen clearly on your palmtop, and that improvements in battery life were also on the cards. Further into the future, you can expect to see Windows implemented on palmtops from HP (and others), working from ROM. HP already has a number of communications options for the 95LX — a GPS link for determining your position at all times and a Motorola NewsStream receiver for wireless electronic mail and other data transmission. You can expect to see more later.

Around the same time as Apple's announcement, Casio and Tandy announced that they would work address and fax number, and faxes it out to Joe.

Newton machines will be provided with slots compatible with a new Apple interface called TrimBus. This is described as 'a high-performance, 32-bit, multimedia-capable bus'. The slots will also be compatible with the PCMCIA 2.0 card format which will enable it to work with add-on memory, network interfaces and fax-modems produced for the next generation of laptops.

The slots will also be useful for cards with third party software on them. For example, you could have a database of the London Underground on a card. It would have the actual Underground map that can be put onto the screen at your command. But, because of Newton's intelligence, you could write into the boxes at the top of the file a question that deals with how to get from Green Park to the Tube stop near Harrods. It would put at the bottom of the screen the message 'Take the Piccadilly Line south to Knightsbridge' and then show you a zoomed image of the Piccadilly Line with these stops highlighted. The large US-based publisher Random House has already declared interest in the new machine.

You will probably see even better calendars designed for the Newton as well as expense account programs and so forth. You could see *New York Times* crossword puzzles on a card, complete with clues and all the answers if you wish. In fact, Apple thinks word games as well as action games on cards might do very well on the machine.

While you could see a lot of horizontal applications being developed by third party vendors, the Newton could also find itself in use in vertical markets. A software vendor could write a forms package for taking an inventory or signing guests into hotels. Apple plans to have its software development kit on the market for third party vendors by the end of the year. PC and Macintosh programs to interface with the Newton will, of course, be available, and Traveling Software has announced that it is working with Apple on the software to connect PCs to the Newton.

When the Mac originally came out, it gave the software vendors a whole new platform to develop under. The first developers, with the exception of Microsoft, did not come from the traditional DOS world. Rather, they saw the Mac's features and designed their applications with those features in mind. We ended up with exciting new approaches to spreadsheets, text and graphics, and animation, which created a new class of software applications.

Apple believes that with the Newton the same phenomenon will happen again. It sees all kinds of new software being designed just for it and, with the machine as the catalyst, it will bring millions of new users into the world of computers who would never have touched one in the form factors we know today. Priced at under $1000, Apple hopes to get it on the market during the first quarter of 1993.

together to exploit the Personal Information Processor market. Casio already has 50% of the digital diary market, so the field is obviously of interest to it. The two companies will be getting their operating system software from GeoWorks which, in addition to the software that gave it its name, has designed GEOS, a graphical operating system. GEOS sits on top of DOS at present but may not necessarily in the new products, according to Lee Llevano, GeoWorks' VP of Marketing. Unlike Apple, however, the companies involved are being very cagey about what will emerge from the agreement or when. The most they would reveal is that machines would be launched sometime next year. 'Apple is not the only player in this market,' said Howard Elias, Vice President of Tandy. The impression I've been given from my discussion with Mr Llevano is that the Tandy/Casio machines will be aimed more at the home user than the Apple product, perhaps with games.

Numerous firms are working on small pen-based computers for salespeople and other vertical market applications with wireless communications built in. These machines are likely to start life in the US and will be focused on specific markets rather than the broad base of consumers. GRiD, which is owned by Tandy, is working on 'wearable' pen-based computers, and Motorola has announced that it will be working with Samsung on pen-based PCs connected to wireless LANs which would be available by the end of the year, running either Go's PenPoint operating system or Pen Windows. There are already several announced applications for PenPoint which sound as if they offer similar functions to some of Newton's. PenPoint uses a lot of system resources. It requires at least 2Mb ROM, 4Mb RAM and 5 to 8Mb of storage space, but as the cost and size required for such components declines, it is possible that the market for these will merge with that of personal digital organisers at the high end of that market.

At CES, a personal organiser add-on was being demonstrated for the Nintendo GameBoy. It will have a small keyboard and a range of personal organiser options including a database, diary, translator and map for around £60. Zenith, better known for more serious portables, demonstrated some pretty conventional looking Casio-like personal organisers (the company currently has no plans to bring them into Europe).

Psion, which was one of the first into this market, is not giving much away about its future plans. Since it is a fraction of the size of some of the other companies looking at this market, it may be in danger of being driven out of the broad-based market altogether in the long run, but it has a track record of success in the UK with corporates in particular so it is difficult to discount it altogether, even if it is eventually driven into a niche.

There are three 'wildcard' players. Two of them have talked about producing machines that sound similar to Newton in many respects — RISC-based pen-controlled pads with easy-to-use interfaces and sophisticated communications capabilities. General Magic was spun off from Apple two years ago and is working in secret on a 'Personal Intelligent Communicator' as distinct from the more organiser-like product Apple is marketing.

Herman Hauser's Active Book project is even more mysterious. A tentative launch date of Christmas 1990 was given two years ago for this ARM-based machine with extensive communications capabilities, but the date kept slipping and the company was eventually bought by AT& T. There has been no news since.

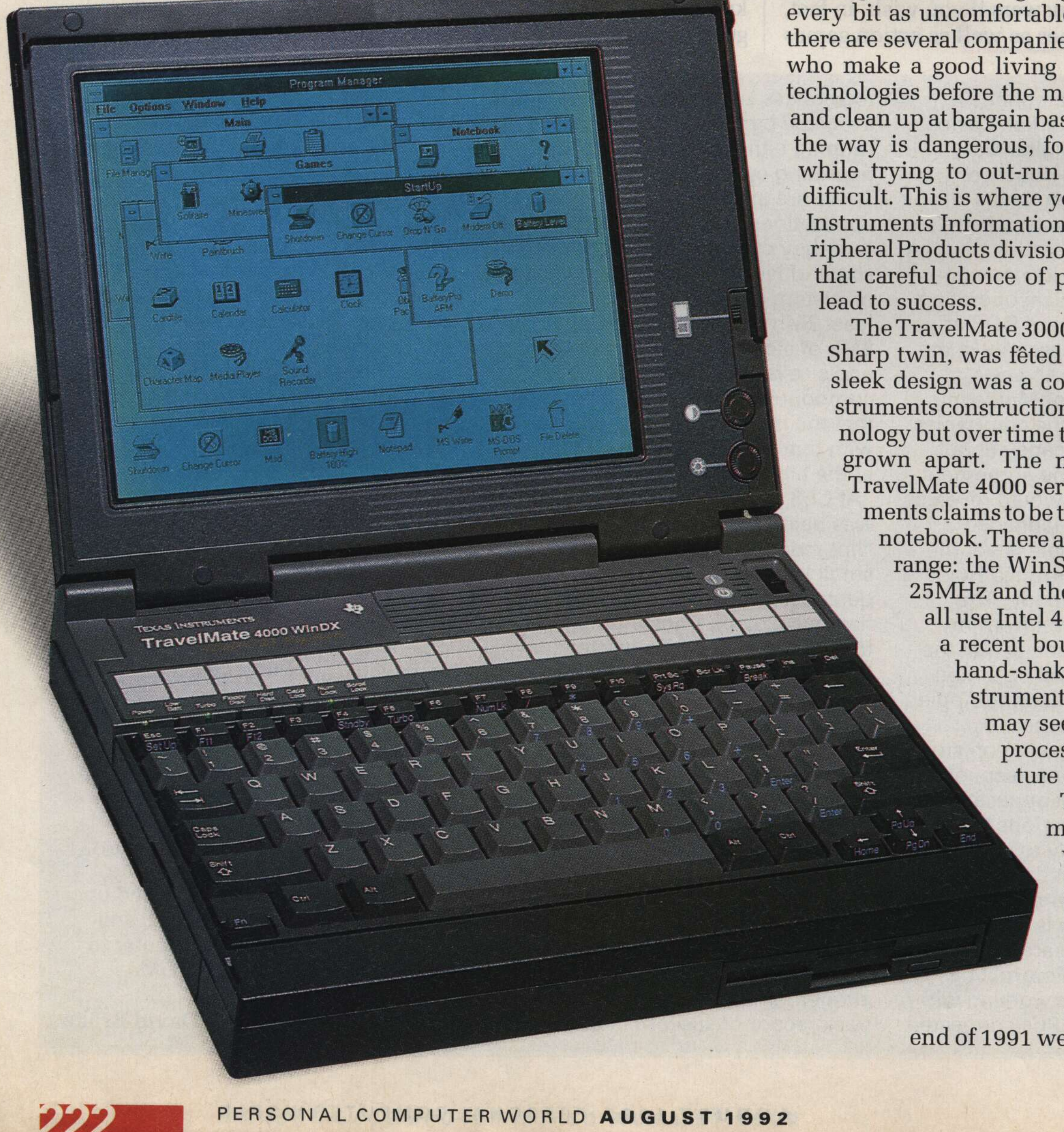
The third, Sony, was originally mooted as a probable partner for Apple to make Newton because of its consumer bias and its existing arrangement to manufacture the PowerBook 100s. Apple teamed up with Sharp instead, however, and Sony's only handheld computer to date is a DOS-based CD-ROM product.

David Brake

HARDWARE BENCHTEST

TI TravelMate 4000 WinDX/25MHz

With a price tag approaching £3000, Texas Instruments' 486-based top-of-the-range notebook is aimed high. But as ever, you get what you pay for, in this case a fast, well put together portable. Simon Rockman, he says yes.



Sitting on the cutting edge of technology can be every bit as uncomfortable as it sounds. And yet there are several companies, like GRiD and Dolch, who make a good living out of pioneering new technologies before the mass marketeers come in and clean up at bargain basement prices. If leading the way is dangerous, following closely behind while trying to out-run the masses is equally difficult. This is where you will often find Texas Instruments Information Technology Group Peripheral Products division, but history has shown that careful choice of product and timing can lead to success.

The TravelMate 3000 portable, along with its Sharp twin, was fêted in many a review. The sleek design was a combination of Texas Instruments construction and Sharp display technology but over time the two companies h[illegible] grown apart. The newest progeny is the TravelMate 4000 series which Texas Instruments claims to be the smallest, lightest 486 notebook. There are three machines in the range: the WinSX/16MHz, the WinSX/25MHz and the WinDX/25MHz. They all use Intel 486 processors, although a recent bout of paper signing and hand-shaking between Texas Instruments and Cyrix executives may see the odd native Texan processor popping up in future models.

TI sees the 486 as the machine to cash in on the way the market is moving, as many of its customers are in the Fortune 1000 companies and 40% of the desktop machines those companies bought at the end of 1991 were 486 based. It expects

PHOTOGRAPHY BY BRUCE MACKIE